

REMARKS

There are now pending in this application claims 1-4 and 8-16, of which claims 1, 8, 13, and 15 are independent. Claims 5-7 have been cancelled without prejudice or waiver of their subject matter. No claims have been added.

Claims 8-16 stand allowed. As none of these claims has been further amended, they remain in condition for allowance.

The drawings have been objected to on grounds that they do not illustrate each and every feature illustrated in claim 5. While not necessarily agreeing with the propriety of this objection, Applicants wish to expedite prosecution and have therefore cancelled claims 5-7. Accordingly, the objections to the drawings has been addressed and should now be withdrawn.

The invention as set forth in independent claim 1 is directed to an actuator comprising a rotor that includes a magnet that has a cylindrical shape, and an outer peripheral surface alternately magnetized into different poles in a peripheral direction, and a soft magnetic member that is fixed to an inner diameter portion of the magnet. The actuator also comprises a coil that is concentric with the magnet and arranged adjacently to the magnet in an axial direction thereof, and a stator that has a magnetic pole portion opposed to the outer peripheral surface of the magnet. The invention is characterized in that the soft magnetic member opposing the rotor, and the stator are excited by the coil and, as now amended, is further characterized in that the rotor is inserted into an inner diameter portion of the coil and the soft magnetic member included within the rotor and fixed to an inner diameter portion of the magnet is capable of rotating as the rotor, together with the magnet.

The additional characterizing features now recited in claim 1 are supported in the specification at least in Figure 5 and page 20, lines 3 et. seq.

Independent claim 1 is rejected under 35 U.S.C. § 103(a) as being unpatentable over Maegawa et al. (U.S. Patent No. 6,316,851) in view of either of Sakamoto (U.S. Patent No. 5,780,944) or Jackson, Jr. (U.S. Patent No. 4,445,061). Given the above amendments and for reasons which follow, the rejections are respectfully traversed.

As now recited in independent claim 1 the invention calls for the combination of the rotor being inserted into an inner diameter portion of the coil and the soft magnetic member included within the rotor and fixed to an inner diameter portion of the magnet being capable of rotating as the rotor, together with the magnet. Thus, as recited in claim 1, the invention calls for the feature in which an inner magnetic pole portion is excited by the coil and is rotatable.

Maegawa et al. relates to a single-phase motor which includes a rotor magnet alternately magnetized to different poles by dividing it along the circumferential direction in which a coil is disposed in an axial direction of the rotor magnet. Its stated objects are to provide a single phase motor wherein a wide space within which a coil is wound is maintained to achieve higher output and to provide a motor in which a small diameter portion having a diameter smaller than that of an inner magnetized pole portion is provided on an inner yoke and a core is wound around the small diameter portion. However, the reference is not understood to disclose or suggest Applicants' invention, and more specifically the arrangement of Applicants' invention which incorporates at least the features of an inner magnetic pole portion which is excited by the coil and that is rotatable.

Applicants respectfully that the secondary reference to Jackson, Jr. and Sakamoto, do not meet the shortcomings of Maegawa et al. More specifically, neither disclose a feature in which an inner magnetic pole portion which is excited by the coil is rotatable.

In contrast to Applicants' invention as now recited in claim 1, the applied references are understood to have an inner magnetic pole portion which is fixed but is not rotatable or alternatively, do not have the inner pole portion at all. Thus, it is not seen how the applied art, whether taken individually or in combination renders the invention as recited in claim 1 unpatentable.

Claims 2-4 depend from claim 1 and are therefore patentable over the art of record for reasons noted above with respect to the claim 1. In addition, each recited features of the invention still further distinguishing it from the applied art. Favorable and independent consideration thereof is respectfully sought.

Applicants respectfully submit that all outstanding matters in the above application have been addressed and that this application is in condition for allowance. Favorable reconsideration and early passage to issue of the above application are respectfully sought.

Applicants' undersigned attorney may be reached in our Washington, D.C. office by telephone at (202) 530-1010. All correspondence should continue to be directed to our below listed address.

Respectfully submitted,



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